

ZOOLOGICAL RESULTS
OF THE
SWEDISH ZOOLOGICAL EXPEDITIONS TO SIAM
1911—1912 AND 1914

2.

LIZARDS

BY

EINAR LÖNNBERG

WITH 5 FIGURES IN THE TEXT

3.

BATRACHIANS

BY

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WITH 3 FIGURES IN THE TEXT

The following 22 species of lizards have been collected by Count NILS GYLDENSTOLPE during his two expeditions to Siam 1911—1912 and 1914—1915. Most of them have been known to belong to the herpetological fauna of Siam before, but there are also some novelties viz. a new species of *Acanthosaura*, and a highly interesting new Scincoid genus which has been named *Isopachys*.

With regard to the natural conditions of the localities in which the animals have been collected I refer to the communications made on this topic by GYLDENSTOLPE in his paper on the snakes from the same expedition.

Four localities for lizards have, however, not been mentioned there, and concerning them GYLDENSTOLPE has communicated the following: »Pak Koh situated in a latitude of about 18° N., mostly dry or mixed forests. Bang Hue Pong on the slopes of Koon Tan mountains, Northern Siam, almost the same vegetation. Den Chai in Northern Siam, but further south than the two places mentioned, dry forests. Keng Loi [= rapids] at the middle course of Meping river, low bush, thick jungles mixed with bamboos and some big trees, high grass in open places.»

1. *Phyllodactylus siamensis* BLGR.

2 specimens (M. SMITH coll.).

This interesting Gecko, the first member of the genus found in the Indian region does not appear to extend its distribution to Malacca, but to be confined to the interior and northern parts of the country. This indicates that it is endemic, and not accidentally introduced, although the distribution of the genus generally might make such a supposition possible.

2. *Hemidactylus frenatus* (SCHLEG.) DUM. & BIBR.

1 specimen, Siam, 1912. 2 specimens, Siamese Malacca, Koh Lak, Nov. 1914.
Common in the houses.

3. *Hemidactylus platyurus* SCHNEID.

1 fine specimen from Koh Lak, Siamese Malacca, Nov. 1914.
Caught in a house.

4. *Gecko verticillatus* LAUR.

5 specimens from the Korat plateau, Eastern Siam, 1912. 5 large specimens from the neighbourhood of Bangkok, 1914—1915. A smaller specimen from Doi Par Sakeng, near Muang Fang, Northwestern Siam, caught in June 1914, has the width of the head (16 mm.) not quite twice as great as the distance from the end of the snout to the orbit (9 mm.). This together with a more pronounced annulation of the tail with regard to the colouration is a juvenile characteristic shared with a specimen of corresponding size from the Korat plateau.

Very common in the forests as well as in the houses.

According to Count GYLDENSTOLPE the natives connect several superstitious beliefs with this lizard.

So for instance if its cry is heard less than seven times it is a bad omen, but if it is heard seven times it is a good omen.¹ When the Gecko emits a certain sound which, however, GYLDENSTOLPE did not have the opportunity of observing, the natives said that the lizard suffered from ›too big liver›, and called for help from a small green tree-snake which entering the mouth of the lizard used to help it by eating off a piece of liver. — This belief has probably its origin in the fact that the Gecko sometimes swallows small tree-snakes, although it falls a victim to the larger ones in spite of its fierce struggle.

5. *Draco maculatus* GRAY.

1 specimen from Den Chai, Northern Siam, March 1911.

›In the dry forests, rather common in the northern parts of the country. It is difficult to detect these lizards as their colour agrees with that of the bark of the trees. As a rule they sat on the tree trunks 1½ (2) m. above the ground, seldom higher, but if they were disturbed they crawled up on the stem. When the *Draco* suddenly leaves the tree and glides through the air one gets the impression of some big insect. In each flight they covered a distance of about 10 m. sinking about 1 m. They always alighted on another trunk, never in the grass.› (G.)

6. *Draco blanfordii* BLGR.

3 specimens from Siam (M. SMITH coll.).

The wing-membranes are mottled with scarlet as well above as beneath on the posterior portion.

¹ STANLEY S. FLOWER has in his valuable paper on ›Reptiles of the Malay Peninsula and Siam› recorded several such popular beliefs about the ›Tokay›.

7. *Calotes versicolor* DAUD.

3 specimens from Koh Lak, Siamese Malacca, Nov. 1914; 1 specimen from Pak Koh, Northern Siam, 6/4 1914; 5 specimens from Eastern and Middle Siam, 1912. This species is evidently distributed all over Siam in suitable localities. »Rather dull and easy to catch.» (G.)

8. *Calotes emma* GRAY.

2 specimens, Siam (M. SMITH coll.).

Both these specimens differ from the current descriptions in the literature by having a quite well developed gular pouch which begins at the middle of the interramal space and extends backwards to the shoulder girdle. The number of scales is also greater than the normal record and amounts to 61—63 in the larger specimen. FLOWER mentions, however, a still larger number of scales in a specimen, said to be from Bangkok, viz. 72.

9. *Calotes mystaceus* DUM. & BIBR.

5 specimens from Eastern and Central Siam, 1912.

This species evidently does not extend to the southern parts of the country.

10. *Acanthosaura crucigera* BLGR.

1 specimen, Siam (M. SMITH coll.).

According to the dimensions of the postorbital and nuchal spines this specimen must be identified as above. The number of labials, 13 above and below, is, however, larger than this species ought to have.

11. *Acanthosaura horrescens* n. sp.

A short-tailed, spinous *Acanthosaura* of the *armata*-group with the nuchal crest separated from the dorsal. It is also very remarkable, because it is provided with a well developed transverse gular fold. In consequence of this this lizard resembles the genus *Gonyocephalus*, but *Acanthosaura* with regard to the arrangement of the spines and its lepidosis in general, so that I think it most correct to retain it in this genus. It may be diagnosed in the following way:

Snout a little longer than the diameter of the orbit. Canthus rostralis and superciliary edge angular, the latter ending abruptly so that a short angular projection is formed. The longest diameter of the tympanum about equal to the eye-opening. Upper head-scales keeled, some of those on the middle of the forehead and a mesial row on the snout with keels radiating from a raised centre. These

scales and a supraocular group on either side larger than other scales on the upper surface of the head. A triangular spine (compressed, but also keeled on the broader sides) is situated just behind the end of the supraciliary edge, and is flanked by some smaller scales, the large one has a height equal to about $\frac{2}{3}$ the diameter of the tympanum. Behind this on either side of the nape a group of about four short and stout spines. A ridge from below the eye to above the tympanum with scales increasing in size behind so that a low crest of triangular scales is formed. A strong nuchal crest, separated from the dorsal. The four hindmost scales in this are the largest, measuring more than the diameter of the tympanum. On either side the nuchal crest is flanked by erect, strongly keeled scales produced in sharp points. A transverse occipital crest on either side forms about right angle with the nuchal crest, and is constituted by five compressed spine-like scales, the most mesial of which is small, the fourth from the median line is the longest, attaining a height more than equal to the diameter of the tympanum. These transverse occipital crests

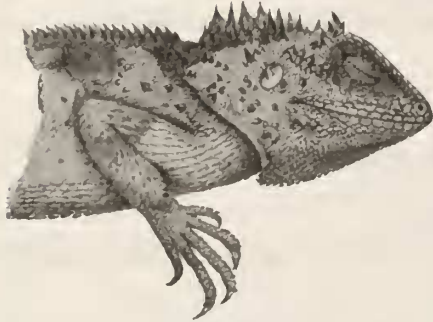


Fig. 1. *Acanthosaura horrescens*.
Nat. size. A. Österberg del.

are flanked by large, erect scales which are strongly keeled and mucronate, and especially at the lateral end of the crest spine-like. 12 upper, and 11 or 12 lower labials. The anterior lower labials keeled, and traces of keels may be seen on some other labials. All the scales on the interramal space strongly keeled; an enlarged series of scales on either side parallel to the lower labials, but separated from them by 2 or 3 rows of smaller scales. The mesial row of gular scales also enlarged, mucronate. A transverse gular fold and an oblique fold in front of the shoulder on either side, all of them covered with small, but sharply mucronate scales. Around the corner of the mouth and on the sides of the neck numerous scattered tubercular spines. The dorsal crest, which at the anterior end is completely separated from the nuchal crest, is low, and composed of a mesial series of enlarged, pointed scales, and on either side of that a series of almost as large, strongly carinate scales with their sharp points directed upwards and a little backwards. This condition prevails throughout the back, so that, seen from above, the ridge of the back appears to be tricarinate. Scales of the back and sides small, intermixed with irregularly scattered, enlarged scales, which are more or less strongly keeled. Ventral scales large, strongly keeled and sharply mucronate. Fore limbs with large, keeled scales, smaller at the elbow. Hind limb with large, keeled scales on inner and anterior surface of the thigh, the outer and the posterior side of the same mostly covered with small scales which are mixed with large, keeled ones. The tibia is mostly covered with large, keeled scales, but at the upper as well as at the lower end areas of small scales are found near the joints. Scales of fingers and toes keeled and mucronate. Third and fourth fingers equal. Tail comparatively slender covered with large, keeled scales, those on the lower side largest. Colour (in spirit) olive brown. A broad dark band on the sides of the head from above the nasal through

the ocular region to the tympanum. A large blackish brown, rhomboidal spot on the upper surface of the neck extending forward on the sides of the nuchal crest and with the lateral angles in connection with a dark streak downwards in the fold in front of the shoulder. Three broad, dark brown patches across the back, a fourth similar across the root of the tail, and a series of others across the remainder of the tail. The adpressed hind limb reaches the eye.

Distance from snout to vent	81 mm.
» » vent to tip of tail	89 »
Width of head	20 »
Length of hind limb	61 »

A single specimen from Bang Hue Pong, collected the 7th of May 1914. The locality where this interesting lizard was found is situated on the slopes of the Loi Koon Tan where the vegetation was of the dry forest type.

Another lizard from Koon Tan collected in Sept. 1914 is very similar, but differs in the following details. The superciliary edge less projecting behind. The triangular postorbital spine is smaller and shorter. The spines on the nape smaller. The nuchal crest composed of 7 almost subequal scales with addition to a small one at either end. To the transverse nuchal crest corresponds a group of spines on either side (not connected with the real nuchal crest), the central one of which is largest. All the lower labials are keeled. The transverse gular fold only slightly indicated in the middle. The lateral series of the dorsal crest less strongly developed, but the tricarinate appearance of the crest is nevertheless plainly visible especially in front. Fourth finger very slightly longer than third. On the whole the difference is confined to the less pronounced spinousness of the specimen from Koon Tan. The colour-pattern as well as the general arrangement of the scales agrees with the corresponding ones of the lizard from Bang Hue Pong, and it is thus probably only a product of individual variation.

Distance from snout to vent	73,5 mm.
» » vent to tip of tail	87,5 »

The locality where this specimen was collected lies near the summit of the Loi Koon Tan at an altitude of 4400 feet where the vegetation chiefly consisted of great pines.

12. *Physignathus mentager* GTHR.

1 fine specimen from Eastern Siam, 1912.

This species does not appear to extend to the Malay Peninsula. The other members of the genus are known from Cochinchina, Timor Laut and Australia.

13. *Liolepis bellii* GRAY.

Numerous specimens, Siam, 1911. 1 specimen Hat Sanuk, Siamese Malacca, Febr. 1915.

As is known this lizard is at least partly herbivorous, and the large intestine is usually filled with vegetable matter, but there is no real cæcum. The small intestine opens into the abruptly enlarged large intestine, and the end of the former projects somewhat into the lumen of the latter so as to form a *valvula ileocolica*, but otherwise there are hardly any structural adaptations to the herbivorous diet to be seen.

»These lizards live in open sandy places and run very rapidly. They appear only during the hot time of the day. When running they raise the anterior part of the body and expand the sides by means of their elongated ribs. They are very shy and take soon their refuge to holes in the ground. These lizards are eaten by the Siamese.» (G.)

14. *Varanus nebulosus* GRAY.

3 specimens from Doi Par Sakeng near Muang Fang, North Western Siam, resp. 9/7, 15/7 and 23/7 1914.

»Mostly seen in trees and taking their refuge in hollow logs.» (G.)

The largest of the above mentioned specimens measures about 105 cm. in total length, or 10 cm. more than recorded in the Catalogue of Lizards B. M.

15? *Varanus dumerilii* S. MÜLL., (or *V. nebulosus* GRAY.)

A large *Varanus* measuring 141 cm. in total length and collected between Hue Sai and Ko Lak in January 1915 is suspected to belong to this species on account of its having the abdominal scales slightly keeled. In some other respects it differs, however, from the description and agrees better with *V. nebulosus*. So f. i. the snout is not depressed at the end but rather convex as in *nebulosus*. On the other hand the snout is longer than half the length of the head as in *dumerilii*. The supraocular scales are transversely enlarged, so that 6—7 of them are more than twice as broad as long. The scales on the anterior upper portion of the neck have a flat surface and are subcircular, but basally thickened so that the upper neck thus gets a tubercular appearance. These scales are somewhat larger (about 4 mm.) than those of the back, which are oval (about 3 × 4 mm.) and obtusely keeled. Tail with a doubly toothed, sharply serrated crest.

Of the two species mentioned above only comparatively small specimens have fully been described. The specimen of *V. nebulosus* mentioned above appears to be the largest known, as it measures 105 cm., and of *V. dumerilii* the largest known specimen appears to have been 37 cm. from snout to vent, while the corresponding measurement of the present specimen is more than 60 cm. It is thus difficult to

decide, whether this *Varanus* is a very old specimen of any of the species mentioned, or not, as material for comparison is lacking. It is for instance possible that very old specimens of *V. nebulosus* get their abdominal scales keeled when they have attained a great age. That the present specimen really must be regarded as old appears to be proved not only by its size, but also by the thickness of the integument, especially the very thick scales of the upper neck, which form a protective armour. The stoutness of the powerful claws etc. speak for the same thing.

16. *Varanus salvator* LAUR.

A very large specimen (skin and skull) measuring about 250 cm. in total length. This specimen was shot in a swamp at Tha Law, Central Siam.

»This species is rather common in Central Siam in the great swamps.»

17. *Tachydromus sexlineatus* DAUD.

1 specimen from Ban Sakerat, Siam 1912.

When STANLEY S. FLOWER in the year 1899 wrote about the Reptiles of Siam he expressed the belief that this species probably would be found in Siam as it is »recorded from both Burma and Cochinchina». This has now proved correct.

18. *Mabuia multifasciata* KUHL.

3 specimens from Ban Sakerat, Eastern Siam, Jan. 1912.

19. *Mabuia siamensis* GTHR.

1 specimen from Keng Soi at the middle course of Meping river, Northern Siam, ⁷/₁₀ 1914.

20. *Lygosoma maculatum* BLYTH.

1 specimen from Pak Koh, Northern Siam, March 1914; 1 specimen from Bang Hue Pong ⁵/₇ 1914; 3 specimens from Doi Par Sakeng ¹⁶/₇ 1914.

21. *Lygosoma olivaceum* GRAY.

1 specimen, Siam, 1914 (M. SMITH coll.).

Isopachys n. g.

Body cylindrical, a little depressed in front, not tapering towards the posterior end which is abruptly rounded off. Limbs absent. Scales smooth with thin, underlying osteodermal plates of the usual appearance with symmetrical tubules. Nostril pierced in a large nasal, no supranasal. Tongue rather thin and free in front, covered with imbricate scale-like papillæ. Teeth in the jaws rather stout with blunt cusps. Palatine bones separated in the median line. No tympanum. Eyes rudimentary. Frontoparietals double, interparietal distinct.

22. *Isopachys gyldenstolpei*¹ n. sp.

Head short, triangular, but rather broadly rounded off in front (conf. fig. 3), the musculature of the jaws giving it a somewhat swollen appearance. (Unfortunately the head has been somewhat damaged by a blow and therefore some details of the structure cannot be exactly described. These have also been left out in the figures which are so carefully represented as possible.) The obtusely rounded snout projects

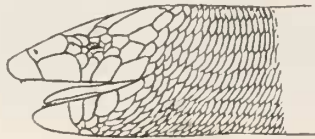


Fig. 2. *Isopachys gyldenstolpei*
(twice enlarged).

A. Österberg del.

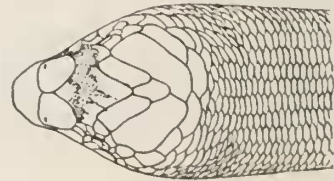


Fig. 3. *Isopachys gyldenstolpei*
(twice enlarged).

beyond the end of the lower jaw. The rostral is very large and forms on the upper side of the snout an almost straight suture with the large nasals which broadly meet in the median line. They form in the corner between the rostral and the first labial an almost right angle and there at some distance from the anterior margin and a little further from the lower the nostril is pierced. Wedged in between the large nasals are to be seen the remains of a shield but whether this represents a fronto-nasal, or the anterior end of a very large frontal cannot be decided as it is broken. The posterior end of the frontal is wedged in between a pair of elongate frontoparietals, but is at the posterior end in contact with the anterior end of the interparietal; latter shield longer than broad much smaller than the frontoparietals. Parietals large, meeting behind the interparietal to form a long oblique suture. The posterior margin of both parietals is bordered by a row of five strongly enlarged nuchal scales which, however, are not equal inter se. Even some scales behind these,

¹ Named for Count NILS GYLDENSTOLPE who has made two successful expeditions to Siam and greatly contributed to the knowledge about the vertebrate fauna of that country.

especially on the sides are somewhat larger than the body scales. Four upper labials, the foremost of which is much the largest, the second is the narrowest and situated below the orbit. The region round the orbit is covered with small irregular scales, but in the temporal region the shields are somewhat larger. A very large mental covers the end of the lower jaw and the chin. Behind the same four lower labials

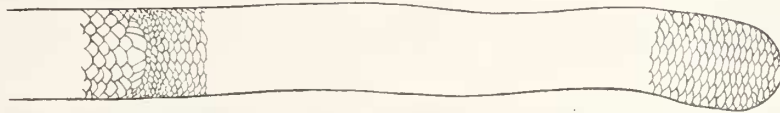


Fig. 4. Tail end of *Isopachys gyldenstolpei*.

A. Österberg del.

the foremost of which, however, on one side is coalesced with the mental. The posterior margin of the mental is bordered by two enlarged scales. 28 smooth scales round the middle of the body, 32 at the anterior third. Two larger anal scales in the middle, smaller on the sides, and very small behind the vent (conf. fig. 4). The scales on the tail are a little larger than those of the body so that there are only



Fig. 5. *Isopachys gyldenstolpei*.

A. Österberg del.

20 scales around the tail near the end of that organ, although it has practically the same diameter as the body. At the extreme end of the tail there is an enlarged somewhat irregular shield.

The colour is dark lead grey with a broad white band on either side (covering 3—4 scales), and a narrow, less sharply defined white median stripe. The latter disappears on the base of the tail, and the dark dorsal colour displays there a serrated edge towards the white lateral band.

Total length	292 mm.
Length of tail	65 »
Transverse diameter at the anterior end of the body	10 »
Vertical diameter » » » » » » »	8,5 »
Transverse » » » posterior » » » »	8,5 »
Vertical » » » » » » » »	7,5 »
Diameter of tail about	8 »

One specimen was found on a sandy path leading down from the mountain-ridge to the coast at Koh Lak Paa, Siamese Malacca (about 12° N) the 9th of Dec. 1914. It was called »Ngu tin» by the natives and regarded as »awfully poisonous» like the »Ngu din» which means *Typhlops*.

As it was of interest to ascertain, whether there were any rudiments left of the shoulder- or pelvic girdles, I asked Dr. GÖSTA FORSELL, and he kindly prepared the accompanying Röntgen-photo of this rare lizard. From the skiagram it is



Fig. 6. Skiagram of *Isopachys gyldenstolpei* proving the absence of a shoulder girdle, but the presence of a tiny pelvic rudiment.

apparent that no shoulder girdle can be traced, but that there is a tiny rudiment of the pelvic girdle to be seen at the vertebra behind the one carrying the last ribs. The thick black blotch is produced by faeces in the rectal portion of the intestine. It may be presumed that these are the remains of earthworms which have been devoured by the lizard.